

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for partitioning of proteins or cells in aqueous two-phase systems (ATPS), comprising the steps of

a) in order to obtain a fusion protein or cell, combining a protein or a cell of interest ~~to~~ with a targeting protein selected from the group consisting of hydrophobins, hydrophobin-like proteins and parts thereof having the ability to partition in ATPS and to carry said protein or cell of interest into one ~~of the phases~~ phase of said ATPS, and

b) subjecting said fusion protein or cell carrying the targeting protein to an ATPS ATPS-mediated protein separation.

2. (Cancelled)

3. (Previously Amended) The process according to claim 1, wherein the hydrophobin is a *Trichoderma* hydrophobin or a part thereof.

4. (Original) The process according to claim 3, wherein the *Trichoderma* hydrophobin is HFBI, HFBII or SRHI, or a part thereof.

5. (Previously Amended) The process according to claim 1, wherein the hydrophobins or hydrophobin-like proteins or parts thereof form aggregates.

6. (Currently Amended) The process according to ~~any one of claims 1, 3, 4 or 5~~ claim 1 for partitioning cells in ATPS, wherein in step a) ~~of claim 1~~ the combination of the cells of interest to the targeting protein comprise bringing said targeting protein onto the surface of said cells.

7. (Original) The process according to claim 6, wherein the cells are yeast cells.

8. (Original) The process according to claim 6, wherein the cells are spores.

9. (Currently Amended) The process according to ~~any one of claims 6 to 8~~ claim 6, wherein the targeting protein is fused to a protein which brings the targeting protein onto the surface of the cell.

10. (Currently Amended) A fusion protein, comprising a hydrophobin or hydrophobin-like protein as defined in ~~any one of claims 3 to 5~~ claim 3 fused to a protein of interest.

11. (Currently Amended) The fusion protein according to claim 10, wherein the protein of interest is a ~~cell-bound~~ cell bound protein or a part ~~thereof~~ of said cell bound protein.

12. (Currently Amended) The fusion protein according to claim 10, wherein the protein of interest is an extracellular protein or a part ~~thereof~~ of said extracellular protein.

13. (Original) The fusion protein according to claim 12, wherein the extracellular protein is an extracellular protein of *Trichoderma*, selected from the group consisting of cellulases, hemicellulases and proteases.

14. (Currently Amended) The fusion protein according to claim 10, wherein the protein of interest is an antibody protein or a part ~~thereof~~ of said antibody protein.

15. (Currently Amended) The process according to claim 1,

wherein the targeting protein is fused to the protein of interest according to ~~anyone of the claims 10 to 14~~ claim 10.

16. (Currently Amended) A recombinant organism producing a fusion protein according to ~~anyone of claims 10 to 14~~ claim 10.

17. (Currently Amended) The A recombinant organism ~~according to claim 16~~, wherein the organism has been genetically modified to ~~be capable of producing~~ produce a fusion protein according to ~~anyone of claims 10 to 14~~ claim 10.

18. (Currently Amended) A recombinant DNA molecule, comprising a DNA molecule encoding a fusion protein according to ~~anyone of claims 10 to 14~~ claim 10.

19. (Currently Amended) A process for producing a fusion protein according to ~~anyone of the claims 10 to 14~~ claim 10 with recombinant organisms, comprising the steps of

a) transforming the organism with DNA molecules enabling expression of ~~such proteins~~ the fusion protein, and

b) recovering ~~such protein~~ the fusion protein from the culture of the recombinant organism.

20. (Currently Amended) The process according to ~~anyone of claims 1, 3-9 and 15~~ claim 1, wherein the aqueous two-phase system is selected from the group consisting of PEG/salt, PEG/Dextran and PEG/starch systems ~~or derivatives thereof~~, detergent-based aqueous two-phase systems and thermoseparating polymer systems.

21. (Currently Amended) The process according to claim 20, wherein the detergent-based ~~ATPS~~ aqueous two-phase system comprises a detergent which is selected from the group consisting of nonionic and zwitterionic detergents.

22. (Currently Amended) The process according to claim 20, wherein the ~~thermo-separating~~ thermoseparating polymer system comprises a polymer which is ~~selected from the group consisting of~~ a polyethylenepolypropylene copolymers copolymer.

23. (Currently Amended) The process according to ~~anyone of~~

~~claims 1, 3, 9 and 15~~ claim 1, wherein the protein or cell of interest is separated from a suspension containing cells or cell extracts.

24. (Currently Amended) A process for separating hydrophobins or hydrophobin-like proteins or parts thereof in aqueous two-phase systems, comprising the steps of

- a) mixing solutions containing said hydrophobin, hydrophobin-like protein or parts thereof with the phase forming chemicals, and
- b) carrying out ATPS separation,

wherein the aqueous two-phase system is as defined in ~~any one of claims 20 to 22~~ claim 20.

25. (New) The process according to claim 1, wherein said targeting protein is not a peptide tag of 12 amino acids or less.

26. (New) The process according to claim 1, wherein said targeting protein does not contain tryptophan.

27. (New) The process according to claim 1, wherein said targeting protein is a hydrophobin or a hydrophobin-like protein.